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ABSTRACT

In comparative studies of homicide, many theories compete. This study examined two established theories, stress theory and culture of violence theory, in terms of their ability to explain state-to-state differences in the rate of highly specific types of homicides. The separate and joint effects on homicide committed by handguns, shoulder guns, sharp and blunt instruments, and the mediating role of availability of weapons in the relationship were studied. The investigation was based on homicide data for the United States for 1980-1984, with states serving as the units of analysis. Results showed that legitimate violence was associated with gun ownership, which in turn was associated with homicidal violence. The findings suggest that the institutionalization of violence at the collective level for socially legitimate purposes provides a model which encourages individuals to purchase a gun for self-protection, and the presence of guns increases the risk of an assault becoming lethal. (ABL)

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SOCIAL STRESS, LEGITIMATE VIOLENCE, AND GUN AVAILABILITY: LINKS TO WEAPON-SPECIFIC HOMICIDES*

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In comparative studies of homicide, many theories compete. This paper examines two established theories, stress theory and culture of violence theory, in terms of their ability to explain state-to-state difference in the rate of highly specific types of homicides. It examines their separate and joint effects on homicides committed by handguns, shoulder guns, sharp and blunt instruments, and finally, the mediating role of availability of weapons in the relationship. Our investigation is based on homicide data for the United States for 1980-84, with states serving as the units of analysis.

These analyses were made possible by four unique state-by-state data sets: the "Comparative Homicide File," the "State Stress Index," the "Legitimate Violence Index" and a measure of gun availability for each state.

HOMICIDE DATA

Williams and Flewelling (1987) criticize the use of total homicide rates in comparative studies of homicide. They suggest that some of the inconsistent findings in such research is attributable to the "failure to disaggregate the overall homicide rate into more refined and conceptually meaningful categories of homicide."

The comparative study of such detailed sub-types of homicide has not been possible prior to the recent creation of the "Comparative Homicide File" (CHF) (Straus and Williams, 1987; Williams and Flewelling, 1987). The CHF contains homicide rates specified by weapons, situations, and the relationships between victim and offender.*1 These detailed rates allow us to examine the more specific microprocesses that link such broad explanatory variables as social stress and the subculture of violence with homicide.

STRESS AND HOMICIDE

The SSI is a broad based multi-indicator measure based on the life events approach to stress. The life events approach asserts that the accumulation of stressful events such as divorce, job loss, change of residence or working conditions, is likely to be a precursor to the onset of changes in physical and mental health. Stressful life events have been linked to criminal activities and violence at the individual level (Straus, 1980b; Farrington, 1980a; Petrich and Hart, 1980; Masuda et al., 1978; Humphrey and Palmer, 1986). The SSI enables the life events approach to be investigated at the level of the social system.*2

The original version of the SSI, which uses 1976 data on stressful events, was strongly correlated with Homicide for states ($r = .69$, $p < .001$) and the simple correlation relationship was confirmed by a multiple regression analysis with ten other variables controlled (Linsky and Straus, 1986). A new 1982 version of the SSI (Straus, Linsky and Bachman-Prehn, 1988) found an even stronger relationship with average homicide rates for the period of 1980-1984 ($r = .75$, $p < .001$). These findings are so notably strong and stable that they beg closer scrutiny and

interpretation. The first column of Table 2 arrays the states in rank order on the 1982 SSI.*3

(Table 1 about here)

Stress and Relationship of Victim to Offender

We began that closer examination in a recent study by investigating the net effects of social stress on homicide rates with controls on a number of competing explanatory variables, including: culture of violence, social control, economic deprivation, percent Black and percent urban (Linsky, Straus and Bachman-Prehn, 1988). The SSI was found to be significantly related to total homicide net of all other explanatory and control variables examined. This paper also examined the relationship of social stress to homicide rates which specify the relationship existing between offenders and victims. The strong relationship between the State Stress Index and the total homicide rate was replicated for family and acquaintance homicide but not for stranger homicide. Thus socially generated stress appears to have its major impact on homicide by propelling established and in some cases intimate interactions in the direction of lethal violence.

Stress and Weapons

The present paper moves on to other issues in the stress homicide relationship. Namely, does the strong overall relationship between the SSI and homicide apply to all methods of killing or is it limited to only some? That is, how are stress-related homicides carried out? This information may reveal important clues regarding the dynamics of the stress-homicide relationship.

Homicide by different weapons may imply various motivational processes intervening between stressors and homicidal response. In the literature on stress, the "fight or flight" concept is prominent (Selye, 1980). When faced with external threats, survival mechanisms that prepare the organism for flight or fight are activated (Cannon, 1963). There is an emergency discharge of adrenalin, a quickening of the pulse, an increase in blood pressure, stimulation of the central nervous system, temporary suspension of digestion, a quickening of blood clotting, and a rise in the blood sugar. Hence the organism is prepared by these physiological responses to engage in physically aggressive or violent activity, which may relate to homicidal behavior involving different types of weapons.

For example, advocates of gun control argue that ready availability of handguns results in some homicides which would not occur otherwise because handguns require only a sudden and momentary arousal to precipitate a lethal response. Put another way, some unwanted or unforeseen homicides may occur under conditions of stress as a function of the "heat of the moment" and availability of suitable weapons. Thus if guns were not available and a more time-consuming method or methods requiring sustained effort were employed, "the heat of the moment" might elapse prior to completion of the fatal act, according to this reasoning.

At the same time, one can argue an almost opposite case in favor of a linkage between stress created aggressive response and slower means of homicide, such as attacks with knives or blunt instruments. Perhaps these means are linked to the powerful emotional states "triggered" by stress because they may require a stronger and more sustained motivation and physical energy to complete the lethal act. Following this line of reasoning we should expect the strongest link of stress and homicide to be with knives and blunt instruments. This issue will be investigated with a non-directional hypothesis since the case can be argued plausibly in both ways. Table 1 arrays the states in rank order on the weapons-specific homicide rates used for this analysis.

(Tables 2a and 2b about here)

SUBCULTURE OF VIOLENCE

There is a proliferation of research which attempts to explain the homicide differentials that exist in our society between different regions and also between different racial subsets of the population. Murder is more often committed by Blacks than by whites, by lower class or working class than by middle class, by men more than by women, and by Southerners more than Northerners (Curtis, 1974; Gastil, 1971; Plass and Straus, 1987; Williams, 1984).

Some investigators have posited cultural theories to explain these homicide differentials (Wolfgang and Ferracuti, 1967; Hackney, 1969; Gastil, 1971; Blau and Golden, 1986). The argument is that murder occurs more often among these groups because they endorse or at least tolerate the use of physical force in settling quarrels. Gastil (1971) attempted to test the regional culture of violence theory by using the percentage of the population in each state who were born in the South as the independent variable. He found that the higher the score on this "Southernness Index," the higher the homicide rate. However, as Loftin and Hill (1974) note, there is a tautology in arguing that the high homicide rate of Southern states is empirical evidence supporting the theory that Southern states have pro-violence cultural norms because such studies research designs do not measure directly the normative system of the presumed subculture (Loftin and Hill, 1974; Erlanger, 1975; Messner, 1983; Dixon and Lizotte, 1987). Instead they typically impute a subculture of violence by regional membership and thus confound subculture with membership in a group which has many other possible violence engendering characteristics such as poverty and racial composition.

Since direct evidence on behavior and beliefs supporting violence is needed to test the Southern culture of violence theory, Straus (1985) created a "Legitimate Violence Index" (LVX) for each of the 50 states. The LVX consists of three broad categories of indicators reflecting socially acceptable preferences for non-criminal violence: high circulation or viewing rates for mass media having high violence content, such as the Nielson audience rating of the most violent television programs; governmental use of violence, such as corporal punishment in public schools; and participation in legal or socially approved violent activities such as the National Guard. This measure has the advantage of

being measured independently of region and emphasizing legal and informal norms concerning violence rather than other structural conditions (such as poverty) or violent behavior itself. Baron and Straus (1987, 1988) found LVX to be a significant predictor of both rape and homicide rates after controlling for many other variables. The scale was modified for the current study by deletion of two items on gun magazine subscription rates since those items are used as an indirect measure of gun ownership in a subsequent section of the study. The second column of Table 1 arrays the states in rank order on the Legitimate Violence index.

OTHER INDEPENDENT VARIABLES

In addition to the two theoretical variables, several demographic variables are included for control purposes because of their well established relationship to homicide: percent black, percent urban, and percent poor (the percent with family income below the U.S. Social Security Administration's poverty line), as reported in the State and Metropolitan Area Data Book, 1986 (Bureau of the Census, 1987).

CORRELATION OF STRESS, LEGITIMATE VIOLENCE, AND WEAPONS-SPECIFIC HOMICIDE

Table 3 presents the bivariate correlations between the homicide variables (the rows) and each of the independent variables (the columns). Of the two explanatory variables, social stress is the most consistently correlated to all of the homicide categories. Correlations range from a high of .71 for Total Gun Homicides to a low of .65 for Shoulder Gun Homicides, and all homicide variables are significant beyond the .001 level.

(Table 3 about here)

Legitimate violence, on the other hand, is significantly correlated with shoulder guns (.44), but the correlations with handguns, blunt and sharp instruments, while in the right direction, are smaller and not significant.

Three control variables are included in the matrix (percent poor, percent black and percent urban). Percent Black is strongly and significantly correlated with all homicide variables. Percent poor, on the other hand, is significantly correlated only with gun homicides, while percent urban, in contrast, is significantly correlated only with sharp and blunt instrument homicides.

The bivariate relationships just presented suggest that the social stress-homicide relationship operates strongly across all weapons categories, while the subculture of violence correlates mainly with firearms homicides.

None of these findings can be relied upon, however, because of the possibility of confounding the independent variables. Stress and poverty, for example, might be confounded with urbanization, or the correlation of the Legitimate Violence Index and homicide may be confounded with percent

urban. Therefore, a multivariate analysis is needed to determine the effects of stress and subcultures of violence after controlling for other variables.

REGRESSION ANALYSIS

We computed five regression analyses, one for each of the five homicide rates, i.e., each of the weapon specific types of homicide was regressed on the State Stress Index, the Index of Legitimate Violence and the three control variables.

Handguns and Other Guns

The top panel of Table 4 shows that both the State Stress Index and the Legitimate Violence Index are significantly related to handgun homicide rates. One of the three control variables, percent black, is also related significantly to handgun slayings while the relationship of percent urban and percent poor with handgun homicide fails to reach significance. All of the exogenous variables together result in an adjusted R-squared of .78.

(Table 4 about here)

Moving to homicide by shoulder guns, the second panel of Table 4 shows that the SSI and the LVX continue to be related significantly to deaths from shoulder guns.

Again, only one of the three control variables, percent black, is significantly related. Percent urban is related negatively to shoulder gun deaths and just fails to reach significance. This finding is consistent with the fact that long guns are more likely to be available in rural areas (Wright, Rossi and Daley, 1983; Dixon and Lizotte, 1987). Here 71 percent of the variance is explained with all of the independent variables together.

Sharp Instruments

The SSI continues to retain high significance with homicides by knives or sharp instruments ($p < .001$). Legitimate Violence is also related significantly to knife deaths but not as strongly as in the case of guns. All three control variables -- percent black, percent urban, and percent poor -- are significantly related to deaths by stabbing. Together the two explanatory and three control variables account for 90 percent of the variance in sharp instrument homicides.

Blunt Instruments

The relationship of the State Stress Index and the homicide rate for blunt objects is highly significant again. The relationship of the LVX to blunt object homicides however fails to attain significance. Of the control variables, percent black and percent urban are significantly

correlated with deaths by blunt objects, while the relationship with percent poor is insignificant. The adjusted R-squared of the five exogenous variables on blunt instrument homicides is 62 percent.

Overall Patterns

Stressful life events (as measured by the State Stress Index) are positively related to homicide deaths for all four types of weapons and the relationships are all highly significant. Thus stress appears to be implicated in homicides, regardless of the type of weapon, i.e., in those that require only momentary arousal or small physical efforts such as with guns, as well as with homicides that may require a more sustained arousal or greater physical effort to complete the lethal act. Thus the opposing arguments advanced early in this paper for the connection of stress with each type of homicide may both be right. That is, the motivations toward lethal violence engendered by stress are not dependent upon a particular type of weapon.

The stress homicide relationship appears to be particularly robust since it is consistently correlated with all four weapon-specific homicide rates and is also net of several other important variables which are related to state variations in homicide.

On the other hand, approval of violence (as represented by the Legitimate Violence Index) is associated specifically with deaths from handguns, long guns, and to a somewhat lesser degree with sharp instruments, but not with blunt instrument deaths. This is anomalous because homicides involving blunt instruments appear to be at least as violent as gun deaths if not more so. The lack of association between the LVX and homicides involving blunt instruments prompted us to reconsider the connection between approval of violence and homicide.

LEGITIMATE VIOLENCE, GUNS, AND HOMICIDE: A PATH ANALYSIS

Reconsideration of the links between legitimate violence and homicidal violence, suggested the possibility that the relationship of the LVX to gun-related homicides may be indirect. Specifically, a violent subculture may increase the likelihood of gun ownership and it is this availability of guns which increases the rate of gun homicides. In contrast, blunt instruments are ubiquitous, probably available regardless of the cultural context. Since the supply of such weapons is constant, it is unable to explain a variable like state homicide rates.

The theory that acceptance of legitimate violence and gun connected homicides were linked by the intervening variable of gun availability can be tested by path analysis, provided there is a state-by-state indicator of gun ownership. A census of privately owned guns would be the ideal, but no such statistics exist for all states.*[4] Instead we used the circulation rate of two gun magazines (Guns And Ammo and Shooting Times) as a "stand-in" for gun ownership since it seems reasonable to presume that gun owners would be the primary subscribers to such magazines.*[5]

(Figure 1 about here)

The top half of Figure 1 presents the results of the path analysis computed to test the hypothesis that relationship between legitimate violence and homicidal violence occurs because a high level of legitimate violence is associated with a high rate of gun ownership as measured by the circulation rate of gun magazines. For this test, we combined homicides by handguns and shoulder guns for a total gun homicide rate.

The path analysis strongly supports the hypothesized model. The direct path from the LVX to gun homicides is only .03, and is not statistically significant. However, there are highly significant paths from the LVX to Gun Magazines (.82) and from Gun Magazines to Gun Homicides (.31). Thus, the indirect path is .25 (.82 * .31), which is most of the .28 "total effect" of Legitimate Violence and Gun Magazines on gun-related homicides.

These findings were internally replicated by a separate path analysis for handgun homicides and shoulder gun homicides separately (not shown here). In each case the patterns were almost identical with total homicides, although the total effects were slightly stronger with the total gun homicides.

Test Of An Alternative Model:
Stress And Gun Ownership

There exists at least the possibility that the strong association of social stress and gun homicides may also reflect the intervening variable of available guns. For example, a high level of stressful events in a community could weaken relational systems and create an atmosphere of generalized anxiety and fear which in turn could lead some citizens to gun ownership for defensive purposes. This scenario, however, seems less likely because stress is strongly associated with homicides from all the weapons examined, whether guns are involved or not.

The path analysis presented in the upper half of Figure 1 indicates that the effect of the SSI on gun homicides is a direct one, however, and is not linked through the intervening variable of gun ownership. This finding was also replicated for both handguns and shoulder guns separately.

Because our indicator of gun availability is an indirect one (gun magazine subscriptions) a possibility exists that it may be measuring something other than gun availability, i.e. some other variable linked to homicides of all kinds. To test this possibility we tested a model using knife homicides as the dependent variable in the path analysis. If the path analysis works in the same way with knife homicides as it did with gun homicides, then it would cast doubt on the validity of gun magazine subscriptions as an indicator of gun ownership or availability. The path analysis in the lower half of Figure 1 indicates almost no linkage (.05) between gun magazines and knife homicides, thus supporting the construct validity of gun magazines as an indicator of gun ownership and helps rule out the possibility that the relationship between Gun Magazines and gun homicides in the first path analysis is an artifact of confounding with an unidentified third variable.

LEGITIMATE VIOLENCE, GUN OWNERSHIP, AND HOMICIDAL VIOLENCE

The association of the LVX with gun ownership at first glance appears contradictory to some recent individual-level research on gun ownership. Dixon and Lizotte (1987), analyzing patterns of gun ownership among individuals, conclude that gun ownership is unrelated to the violent values indicative of subcultures of violence. Their measure of violent attitudes was based on attitudinal items on a respondent's general approval of physical aggression in various situations. However, Dixon and Lizotte exclude from their indicators of violent attitudes items that reflect what they refer to as either "defensive attitudes" (items reflecting approval of violence in self protection or protecting other innocent persons) and the reasonable use of violence by police in carrying out their duties. The excluded items appear not at all inconsistent in content with our macro measure of "legitimate violence." Dixon and Lizotte did in fact find a direct effect of "defensiveness" on gun ownership (p. 400).

Wright, Rossi and Daly (1983) reviewed survey data research on gun ownership and concluded that there is little support for a subculture of violence explanation of gun ownership. Citing the research by O'Connor and Lizotte (1978) and others, they report that early socialization into what might be termed "gun culture" which glorifies not violence but rural values and activities and specifically the sporting use of guns is the primary reason people own guns (p. 112). However, Wright, Rossi and Daly also acknowledge evidence from other studies which indicates that two-thirds to three-fourths of gun owners report that they own them <u>in part</u> for self-defense, i.e., for a normatively and legally legitimate use of violence. Therefore, the evidence from both of these reviews is not inconsistent with our own findings that legitimate violence is associated with gun ownership, which in turn is associated with homicidal violence. These findings suggest that institutionalization of violence at the collective level for socially legitimate purposes (such as legislation endorsing corporal punishment in schools or large appropriations for the National Guard) provides a model which encourages individuals to purchase a gun for self-protection, and that the presence of guns increases the risk of an assault becoming lethal.

FOOTNOTES

1. The comparative Homicide File project is based on a data tape obtained from the Federal Bureau of Investigation. The records on this tape are the Supplemental Homicide Report data for the years 1976-1984, a total of over 157,000 homicides. Williams, Flewelling and Straus converted this data set to rates for each of the states in the United States. In contrast to the homicide rates published by the FBI which are confined to the overall incidence of homicide, or the rates published by the National Center for Health Statistics which are confined to homicide mortality, the Comparative Homicide File specifies the relation of victim and aggressor and, as used in the current study, includes homicide rates by handguns, shoulder guns, knives and blunt instruments. Procedures for aggregating that data to the state level and computing rates are given in Williams and Flewelling (1987) (see Table 3 and Table 4).

2. The Dohrenwend, et al, 1978 PERI scale was used as the basis for the SSI. Many of the items in the individual level life events scales have direct analogs at the societal level, for example, death of a child and the infant mortality rate, lost a home through fire, flood or other disaster and disaster assistance per 100,000 families.

Altogether 15 items form PERI scale were translatable into "macro-indicators," for each state (divorce, abortions, illegitimate birth, infant deaths, fetal deaths, business failures, new unemployment, work stoppages, bankruptcies, mortgage foreclosures, families assisted in disasters, new migrants, new housing units, new welfare recipients, and high-school dropouts). These 15 indicators of stressful events in each state were then combined into the composite State Stress Index. The 15 separate indicators were converted to "Z" scores and then summed. The resulting variable was then transformed to "ZP" scores to present scores in a more easily interpreted range of 1 to 100.

3. The rank order tables include the District of Columbia in order to make the this data available to interested persons. However, the statistical analyses reported in this paper are based on the 50 states and do not include the District.

4. Wright, Rossi and Daly's extensive review of research on the weapons, crime and violence relationship concludes that at present "...we do not know the total number of privately owned firearms in the United States except to the nearest few ten millions..." (1983: 5). Alternatively, information on interview data was available to the study from a national sample of adults that included questions on weapons ownership. However, it was deemed too unreliable when the total sample was disaggregated to the state level to form rates of gun ownership because of small sample variability in the less populous states and because of a possibly large response bias in estimates because of the unwillingness of respondents to admit ownership of guns (Newton and Zimring, 1969) or their inability to report accurately on the subject. The magazine circulation data at least has the advantage of reflecting complete rather than sampled data and is not subject to the same types of social desirability that surveys on guns involve.

5. The data on copies sold in each state are for 1979 and include both newsstand and subscription sales. The sales data were obtained from the Audit Bureau of Circulation and then converted to a rate per 100,000 population.

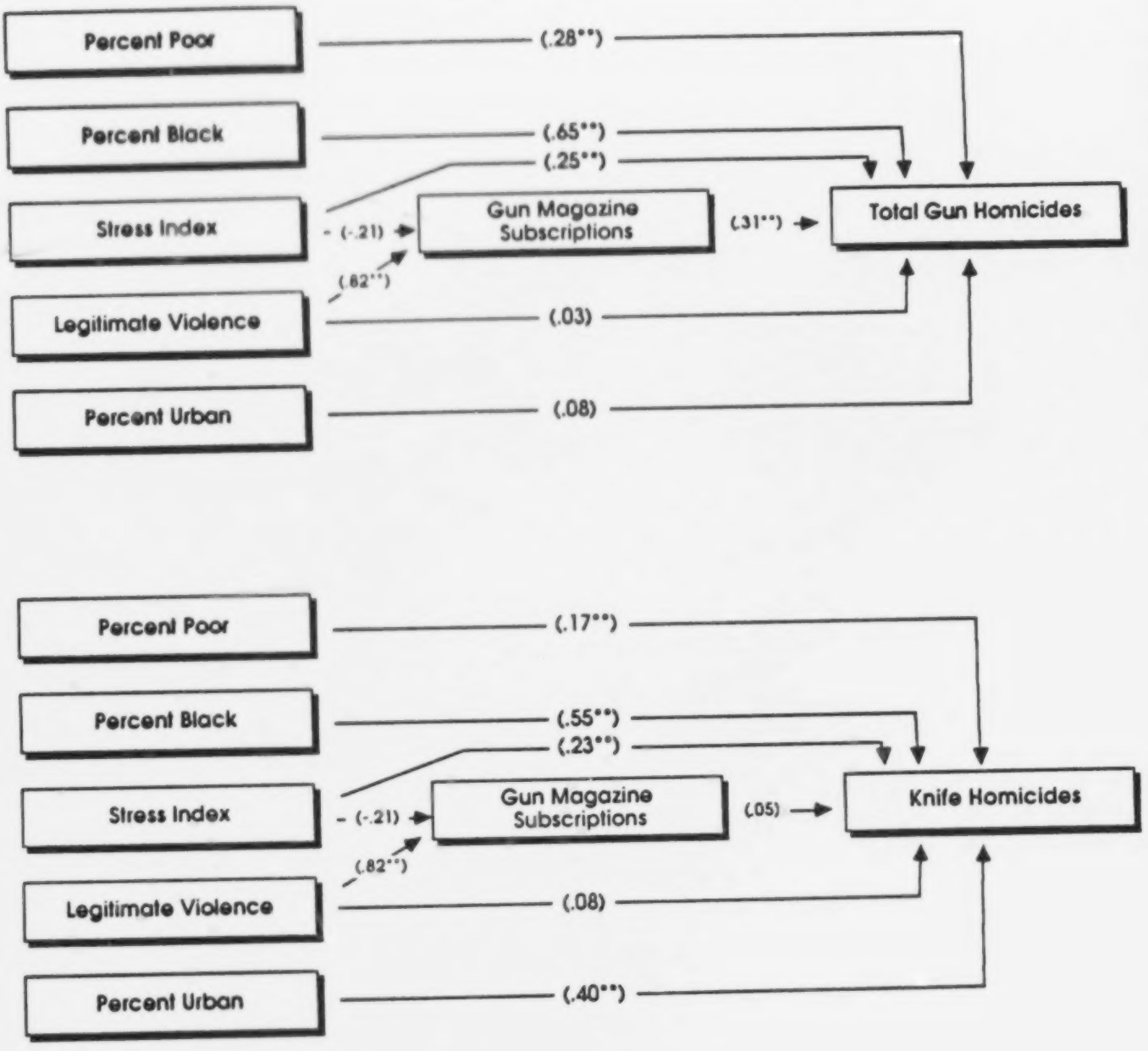

Figure 1. Path Analysis of Gun Homicides and Knife Homicides

Table 1. Rank Order of States on Independent Variables

	State Stress Index		Mod. Legitimate Violence Index		Gun Magazine Subscrip. @100K	
Rank	State	evntindx	State	zplegvio	State	gunmag
1	NEV	100.00	ALK	100.00	ALK	1842.33
2	GA	85.00	WYO	95.00	WYO	1680.00
3	ALK	83.00	NEV	80.00	NEV	1028.47
4	ALA	82.00	GA	78.00	MON	1022.97
5	ARI	75.00	MON	75.00	IDA	1011.72
6	MIS	73.00	MIS	73.00	KAN	778.90
7	TEN	73.00	IDA	73.00	OKL	761.23
8	WAS	72.00	UTH	71.00	S D	730.48
9	CAL	70.00	OKL	68.00	N D	719.42
10	S C	70.00	ARI	65.00	ORG	719.24
11	COL	69.00	LA	65.00	ARI	716.44
12	MIC	69.00	FLA	64.00	TEX	659.85
13	ORG	65.00	TEX	64.00	VT	642.81
14	FLA	60.00	ARK	64.00	WAS	635.13
15	VA	58.00	COL	62.00	UTH	628.50
16	ILL	56.00	S C	60.00	COL	615.51
17	LA	56.00	HAW	58.00	ARK	588.38
18	IND	54.00	VT	58.00	IOW	571.56
19	OKL	54.00	ORG	56.00	N M	571.43
20	TEX	54.00	VA	56.00	IND	536.81
21	HAW	53.00	N M	56.00	LA	525.14
22	N M	52.00	ALA	55.00	PA	523.55
23	KY	51.00	KAN	55.00	W V	509.36
24	N C	51.00	N D	53.00	NEB	502.39
25	OH	51.00	WAS	50.00	N H	483.42
26	W V	51.00	N C	50.00	OH	478.15
27	IDA	50.00	DEL	50.00	MO	471.33
28	N Y	50.00	S D	50.00	KY	468.08
29	DEL	49.00	CAL	43.00	MIN	462.65
30	PA	49.00	TEN	40.00	ME	458.26
31	MO	48.00	OH	40.00	CAL	456.19
32	MD	45.00	NEB	40.00	DEL	445.29
33	R I	40.00	IOW	36.00	MIC	441.60
34	UTH	40.00	ILL	35.00	GA	435.34
35	VT	39.00	KY	35.00	HAW	419.29
36	ME	38.00	ME	34.00	ILL	415.66
37	N J	38.00	W V	33.00	WIS	407.70
38	KAN	35.00	MD	33.00	VA	405.75
39	MIN	32.00	N H	33.00	ALA	393.86
40	ARK	31.00	PA	32.00	TEN	378.40
41	MAS	31.00	MIC	31.00	D C	375.00
42	N H	31.00	CON	30.00	MIS	355.60
43	CON	30.00	IND	29.00	FLA	353.75
44	MON	29.00	N Y	29.00	N C	337.76
45	WYO	29.00	MO	28.00	CON	303.56
46	N D	24.00	MIN	27.00	S C	291.82
47	WIS	23.00	WIS	27.00	MD	284.40
48	NEB	15.00	N J	22.00	N Y	272.67
49	IOW	10.00	MAS	19.00	N J	257.52
50	S D	10.00	R I	13.00	MAS	239.22
51	D C	.	D C	.	R I	217.24

Table 2a. Rank Order of States on Weapon-Specific Homicide Rates, per 100,000 population, 1980-1984

	Handguns		Shoulder guns		Sharp Instruments	
Rank	State	r8v13	State	r8v14	State	r8v15
1	D C	16.46	ALK	2.81	D C	7.57
2	LA	6.85	LA	2.76	TEX	2.87
3	TEX	6.59	TEX	2.75	N Y	2.54
4	NEV	6.06	MO	2.65	LA	2.47
5	MIS	5.83	GA	2.54	CAL	2.46
6	FLA	5.55	MIS	2.24	NEV	2.26
7	GA	5.26	N C	2.22	FLA	2.10
8	ALA	4.76	S C	2.11	GA	2.00
9	N Y	4.71	ALA	2.07	ILL	1.94
10	S C	4.44	FLA	1.98	MIS	1.94
11	ALK	4.31	TEN	1.93	MD	1.92
12	ILL	4.08	ARK	1.74	ALA	1.89
13	CAL	4.07	OKL	1.58	S C	1.81
14	TEN	4.06	KY	1.58	N M	1.67
15	KY	3.99	MIC	1.57	MIC	1.65
16	OKL	3.75	CAL	1.56	ALK	1.58
17	MD	3.74	VA	1.33	N J	1.57
18	N M	3.70	N M	1.33	N C	1.52
19	MIC	3.48	NEV	1.26	ARI	1.47
20	N C	3.42	W V	1.24	TEN	1.47
21	ARK	3.37	ARI	1.01	COL	1.45
22	VA	3.22	WYO	.99	VA	1.34
23	ARI	3.15	IND	.97	DEL	1.34
24	IND	2.96	DEL	.93	OKL	1.31
25	OH	2.90	MD	.83	MO	1.29
26	MO	2.38	KAN	.75	PA	1.22
27	COL	2.32	ORG	.68	HAW	1.15
28	PA	2.12	D C	.64	OH	1.05
29	KAN	2.05	COL	.64	MAS	.98
30	WYO	1.97	ILL	.63	ARK	.96
31	W V	1.95	MON	.63	KY	.92
32	N J	1.86	OH	.63	R I	.91
33	CON	1.62	ME	.60	WAS	.90
34	MON	1.45	WAS	.60	CON	.89
35	WAS	1.31	VT	.55	IND	.88
36	DEL	1.30	CON	.52	KAN	.79
37	HAW	1.17	PA	.49	ORG	.77
38	ORG	1.12	R I	.49	NEB	.66
39	IDA	1.08	IDA	.48	WYO	.66
40	MAS	1.04	N Y	.45	UTH	.61
41	UTH	1.02	HAW	.44	W V	.56
42	NEB	.92	N H	.44	WIS	.55
43	WIS	.90	WIS	.38	MON	.52
44	R I	.70	UTH	.37	MIN	.47
45	VT	.63	NEB	.35	IOW	.45
46	IOW	.60	S D	.34	IDA	.40
47	S D	.53	IOW	.33	VT	.39
48	N H	.49	N J	.32	N H	.35
49	ME	.47	MIN	.31	N D	.28
50	MIN	.46	N D	.31	ME	.27
51	N D	.15	MAS	.24	S D	.23

Table 2b. Rank Order of States on Weapon-Specific Homicide Rates per 100,000 Population, 1980-1984

	Blunt Instruments		Total Gun Rate	
Rank	State	r8v16	State	totgunrt
1	D C	3.66	D C	17.10
2	NEV	1.75	LA	9.61
3	N Y	1.41	TEX	9.34
4	CAL	1.36	MIS	8.07
5	FLA	1.30	GA	7.81
6	ARI	1.20	FLA	7.53
7	OKL	1.19	NEV	7.32
8	HAW	1.13	ALK	7.12
9	TEX	1.11	ALA	6.83
10	GA	.98	S C	6.55
11	MIC	.97	TEN	5.99
12	N M	.96	N C	5.64
13	S C	.95	CAL	5.63
14	ALK	.92	KY	5.57
15	LA	.91	OKL	5.34
16	MIS	.91	N Y	5.16
17	MD	.90	ARK	5.11
18	WYO	.89	MIC	5.05
19	COL	.87	MO	5.03
20	MO	.86	N M	5.03
21	ILL	.86	ILL	4.72
22	N J	.85	MD	4.57
23	DEL	.82	VA	4.55
24	ALA	.82	ARI	4.16
25	KAN	.79	IND	3.93
26	KY	.77	OH	3.53
27	UTH	.74	W V	3.20
28	R I	.74	WYO	2.96
29	OH	.74	COL	2.96
30	TEN	.70	KAN	2.80
31	WAS	.69	PA	2.61
32	N C	.66	DEL	2.23
33	PA	.65	N J	2.18
34	ARK	.62	CON	2.14
35	CON	.61	MON	2.08
36	IDA	.59	WAS	1.90
37	VA	.56	ORG	1.80
38	ORG	.52	HAW	1.61
39	N H	.51	IDA	1.56
40	W V	.50	UTH	1.39
41	MAS	.49	WIS	1.28
42	IND	.48	MAS	1.28
43	VT	.47	NEB	1.27
44	NEB	.43	R I	1.18
45	WIS	.35	VT	1.17
46	MON	.33	ME	1.07
47	ME	.31	N H	.92
48	MIN	.28	IOW	.92
49	S D	.26	S D	.87
50	IOW	.23	MIN	.77
51	N D	.09	N D	.46

Table 3. Correlation Matrix of Independent and control variables against Weapon-specific homicide rates, 1980-1984.

Homicide Variables	Independent Variables					
	EVNTINDX	ZLEGVIO	ZGUNMAG	PBPTOTL	PCTBLCKL	PCTURBL
HANDGUNS	.69**	.30	-.01	.41*	.77**	.29
SHOULDER GUNS	.65**	.44**	.12	.58**	.59**	-.08
TOTAL GUNS	.71**	.35*	.02	.48**	.76**	.20
SHARP INST.	.69**	.14	-.18	.26	.83**	.56**
BLUNT INST.	.67**	.26	.01	.11	.57**	.53**

Note: 2-tailed Significance: *<.01 **<.001; EVNTINDX-State Stress Index; ZLEGVIO-Modified Legitimate Violence Index; ZGUNMAG-Gun Magazine Subscriptions per 100K; PBPTOTL-Percent Poor; PCTBLCKL-Percent Black; PCTURBL-Percent Urban.

Table 4. Regression Analyses of Weapon-Specific Homicide Rates against Five Independent Variables, 1980-1984 (N-50).

Homicide Variables	Independent Variables				
	EVNTINDX	ZLEGVIO	PBPTOTL	PCTBLCKL	PCTURBL
HANDGUNS					
b	.004	.10	.20	.15	.22
beta	.21	.26	.15	.59	.13
SE(b)	.002	.03	.12	.02	.14
t	2.41*	3.37**	1.65	6.24**	1.55
SHOULDER GUNS					
b	.004	.09	.19	.10	.13
beta	.29	.30	.17	.49	-.21
SE(b)	.002	.02	.11	.02	.13
t	2.97**	3.40**	1.66	4.58**	-2.17*
TOTAL GUNS					
b	.004	.09	.21	.13	.06
beta	.25	.27	.17	.59	.04
SE(b)	.001	.02	.10	.02	.12
t	3.07**	3.68**	2.03*	6.60**	.567
SHARP INST.					
b	.003	.03	.15	.10	.48
beta	.23	.12	.15	.54	.40
SE(b)	.008	.01	..06	.01	.07
t	3.87**	2.32*	2.47**	8.47**	6.68**
BLUNT INST.					
b	.004	.04	.04	.04	.40
beta	.35	.19	.04	.26	.40
SE(b)	.001	.02	.10	.01	.11
t	3.02**	1.86	.417	2.12*	3.48**

Note: 2-tailed Significance: *<.05 **<.01; EVNTINDX-State Stress Index; ZLEGVIO-Modified Legitimate Violence Index; ZGUNMAG-Gun Magazine Subscriptions per 100K; PBPTOTL-Percent Poor; PCTBLCKL-Percent Black; PCTURBL-Percent Urban.

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